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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,141

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Giovanni Tricomi

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O'SHEA, GETZ & KOSAKOWSKI, P.C.

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SUITE 912

SPRINGFIELD, MA 01115

EXAMINER

HUBER, ROBERT T

ART UNIT

PAPER NUMBER

4146

MAIL DATE

DELIVERY MODE

01/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,141	Applicant(s) TRICOMI ET AL.	
	Examiner ROBERT HUBER	Art Unit 4146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/11/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "delamination" of claim 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 11 and 12 are objected to because of the following informalities:
 - a. Regarding claim 11, the phrase "the respective areas of the raised pedestals are relatively small" is ambiguous and indefinite since it uses the term "relatively small", which is a term of relative degree. For purposes of examination the phrase "the respective areas of the raised pedestals are relatively small" is interpreted as "the respective areas of the raised pedestals".
 - b. Regarding claim 12, the "relation to a delamination" is ambiguous and unclear. For purposes of examination, the "relation to a delamination" is interpreted as a "relation to a point".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 - 9 and 11 - 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter, Jr. et al. (6,365,976 B1).

a. Regarding claim 1, Carter discloses a carrier device for a monolithic integrated circuit (e.g. device 320 of figures 3D - 3F, which is a cut-away view of figures 1A - 1C and 2A - 2B) comprising portions for the connection of bonding wires (e.g. figure 3F, connections 312, corresponding to connections 202 of figures 2A and 2B and connections 112 of Figure 1B and 121 of Figure 1C) in the form of raised pedestals which rise above a chip connection area on the carrier device (e.g. as seen in figures 1B, 2A, 2B, and 3D – 3F).

b. Regarding claim 2, Carter discloses the carrier device of claim 1, as cited above, wherein the raised pedestals have sides with an angle (α) greater than 45 degrees with respect to a the-plane of the carrier device (e.g. figures 2B shows the pedestal connections in detail, with the angle of the pedestal wall greater than 45 degrees with respect to the plane of the carrier device. As shown, the angle is larger than 90 degrees with respect to the carrier device plane).

c. Regarding claim 3, Carter discloses the carrier device of claim 1, as cited above, wherein the raised pedestals each have a plane surface which is parallel to a plane of the chip connection area (e.g. as seen in figure 2B, the top surface of the pedestal connection is parallel to the plane area of the carrier device) and each has an area for connection of a single bonding wire (e.g. as seen in figure 2B, each pedestal has a single bonding wire).

d. Regarding claim 4, Carter discloses the carrier device of claim 1, as cited above, wherein a height (h_p) of each of the raised pedestals lies in the range between $1/10$ and 1.5 times a chip height (e.g. figure 3D shows the pedestal connections at the same height of the chip, hence it is within the range of $1/10$ to 1.5 times the chip height).

e. Regarding claim 5, Carter discloses the carrier device of claim 1, as cited above, wherein a height (h_p) of each of the raised pedestals (e.g. figure 2B, height 203) lies in the range from $1/5$ to twice a material thickness (h) of the carrier device (e.g. col. 4, line 41 discloses the thickness of the carrier is 1.0 mm, and col. 5, line 4 -5, disclose that the height of the pedestal connector may be between 0.1 to 0.25 mm. Therefore, height of the pedestal connector lies within the range of $1/10$ to $1/4$ of the thickness of the carrier device).

f. Regarding claims 6 and 7, Carter discloses the structural limitations of the carrier device, as cited in claim 1. The process by which the raised pedestal is formed is not given patentable weight since the patentability of a product does not depend on the method of production.

g. Regarding claim 8, Carter discloses the carrier device of claim 1, wherein a silver or gold finish is applied to the raised pedestals (Col. 5, lines 18 - 22,

disclose that the surface of the pedestals have a foil on them which may consist of silver or gold, or the pedestal may be covered with a tin-silver layer).

h. Regarding claim 9, carter discloses the carrier device of claim 1, as cited above, wherein there is at least one unbonded raised pedestal on the carrier device (col. 4, lines 62 – 65, disclose that the pedestals (dimples) may be created so that there are no electrical connections).

i. Regarding claim 11, Carter discloses a carrier device for a monolithic integrated circuit (e.g. device 320 of figures 3D - 3F, which is a cut-away view of figures 1A - 1C and 2A - 2B), comprising a plurality of pedestals located on a common surface of an integrated circuit carrier device and raised in relief from the common surface (as seen in figures 3D - 3F, with reference to figures 2A – 2B), where in comparison to the area of the common surface, the respective areas of the raised pedestals are relatively small (e.g. areas as show in figure 1C, with a diameter range 204 show in figures 2A and 2B and disclosed in col. 5, lines 5—6), so that a plurality of raised pedestals are produced on the carrier device by a punch-type tool pressing the raised pedestals out of the carrier device in the manner of a stamping operation which does not penetrate the full carrier height (e.g. as seen the figures, the pedestals do not penetrate the full height of the carrier 201 in figures 2A and 2B or carrier 320 of figures 3D - 3F. Regarding the pedestals being produced by a punch-type pressing device, the

patentability of a product does not depend on its method of production, therefore it is not given patentable weight).

j. Regarding claim 12, Carter discloses the carrier device of claim 11, as cited above, where the raised pedestals form fixed points in relation to a delamination (e.g. as seen in figures 3D - 3F, the raised pedestals form a fixed point. Regarding the pedestals serving a bonding purpose, the invention of Carter has all the structural limitations of the applicant's inventions, and therefore its intended use is not germane to its patentability).

k. Regarding claim 13, Carter discloses the carrier device of claim 11, as cited above, where the raised pedestals make an angle (α) greater than 45 degrees with the plane of the carrier device at all sides (e.g. figures 2B shows the pedestal connections in detail, with the angle of the pedestal wall greater than 45 degrees with respect to the plane of the carrier device. As shown, the angle is larger than 90 degrees with respect to the carrier device plane), with the sides having rounded junctions parallel to the plane of the carrier device or being rounded as a whole (e.g. figure 2A shows a hemispherical pedestal, while col. 4, lines 47 – 51, and col. 5, lines 46 – 51, disclose all possible shapes the pedestal may incorporate).

l. Regarding claim 14, Carter discloses the carrier device of claim 11, as cited above, where the height of the raised pedestals lies in the range between 1/10 of the chip height and the chip height itself (e.g. figure 3D shows the pedestal connections at the same height of the chip, hence it is within the range of 1/10 of the chip height and the chip height itself).

m. Regarding claim 15, Carter discloses the carrier device of claim 11, as cited above, where only in the areas of the raised pedestals, a finish, particularly silver or gold, is provided for bondability (col. 5, lines 20 - 22, discloses that the pedestal ("dimple") may covered with a layer of tin-silver).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HUBER whose telephone number is (571)270-3899. The examiner can normally be reached on Monday - Thursday (8am - 5pm EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on (571) 272-5026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Huber/
Examiner, Art Unit 4146
January 17, 2008

/MARVIN LATEEF/
Supervisory Patent Examiner, Art Unit 4146